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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DUNWOODY, AARON M

ART UNIT PAPER NUMBER

3679

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/904,975

Applicant(s)

DELMER, DAN W.C.

Examiner

Aaron M Dunwoody

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 16-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Claims 16-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 17-17, 18-18. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second portion having a radial cut must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

Figures 16-18 are missing brief description of the drawings.

Page 21, lines 3-3, delete "for use in connection with the apparatus of Claim 1," because the specification is intended to support and breathe life into the claims, not vice versa.

Appropriate correction is required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Pipe coupling.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the material memory" in line 7; claim 8 recites the limitation "said female end configuration" in line 4; claim 9 recites the limitation "said eventual female end" in line 2; claim 10 recites the limitations "said deformed female end" in line 3, "said deformation" in line 4, and "said removal" in line 5; claim 13 recites the limitation "said second portion" in line 1; claim 14 recites the limitation "said second portion" in line 1; claim 15 recites the limitation "the pipe joint" in line 2; and claim 19 recites the limitations "said temporarily deformed end" in line 5 and "said memory material" in line 8. There is insufficient antecedent basis for these limitations in the claims.

Claim 2 recites, "said cross-sectional sidewall pattern", but is not clear to the examiner whether the first or second piece of pipe is being referenced.

Claims 3 and 4 recite, "said pipe sidewall pattern", but is not clear to the examiner whether the first or second piece of pipe is being referenced.

Claim 19 recites, "a male end of a second segment", but is not clear to the examiner how there can be a second segment without having a first segment.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 6, 7, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 4875714, Lee.

In regards to claim 1, Lee discloses an apparatus for joining a plurality of pieces of pipe, including a first piece of pipe (12) fabricated with a cross-sectional sidewall pattern along its length that is similar in size and shape to the cross-sectional sidewall pattern of a second piece of pipe (14), the first piece having a first female end that is temporarily deformed for receiving a non-deformed end of the second piece of pipe, the temporary deformation being both sufficiently large to permit the insertion of the non-deformed end of the second piece of pipe but also sufficiently small to ensure that the material memory of the first end returns the first end toward its original non-deformed configuration with sufficient compressive force to grip the second end and prevent its inadvertent removal from engagement with the first end.

In regards to claim 2, Lee discloses engagement elements (16, 18, 28, 30) formed within the cross-sectional sidewall pattern, the engagement elements acting

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between the first and the second pieces of pipe to increase the force necessary to disengage the pipe pieces from each other following assembly.

In regards to claim 4, Lee discloses the pipe sidewall pattern being non-corrugated and having a generally constant radius along its length.

In regards to claim 6, Lee discloses a sealing element (48, 50) positioned between confronting surfaces of the first and second pieces of pipe to help provide a watertight seal therebetween.

In regards to claim 7, Lee discloses an adhesive material (48, 50) acting between confronting surfaces of the first and second pieces of pipe to bond the first and second pieces to each other upon insertion of the second piece into the female end of the first piece.

In regards to claim 19, Lee discloses a coupling system for coupling like-shaped and like sized pipe segments to each other, including a female end of a first pipe and a male end of a second segment, at least one of the female and the male ends being temporarily deformed within its elastic limits to permit insertion of the male end into the female end, the temporarily deformed end returning toward its original configuration following insertion of the male end into the female end, the female and male ends configured so that hoop stresses are generated by the material memory of the deformed end to maintain desired engagement between the pipe segments.

In regards to claim 20, Lee discloses a pipe joint comprising first and second pieces of pipe having a generally uniform cross-sectional pattern; a female end of the first piece of pipe formed by temporary expansion of the end via application of energy

thereto, the expansion not exceeding the limits of the pipe material's ability to return substantially to its original cross-sectional shape and size; and a non-expanded end of the second piece of pipe insertable within the female end of the first piece of pipe while the female end is expanded.

Claims 1, 2, 4, 6, 7, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 3784235, Kessler et al.

In regards to claim 1, Kessler et al discloses an apparatus for joining a plurality of pieces of pipe, including a first piece of pipe (12) fabricated with a cross-sectional sidewall pattern along its length that is similar in size and shape to the cross-sectional sidewall pattern of a second piece of pipe (10), the first piece having a first female end that is temporarily deformed for receiving a non-deformed end of the second piece of pipe, the temporary deformation being both sufficiently large to permit the insertion of the non-deformed end of the second piece of pipe but also sufficiently small to ensure that the material memory of the first end returns the first end toward its original non-deformed configuration with sufficient compressive force to grip the second end and prevent its inadvertent removal from engagement with the first end.

In regards to claim 2, Kessler et al discloses engagement elements (14, 20) formed within the cross-sectional sidewall pattern, the engagement elements acting between the first and the second pieces of pipe to increase the force necessary to disengage the pipe pieces from each other following assembly.

In regards to claim 4, Kessler et al discloses the pipe sidewall pattern being non-corrugated and having a generally constant radius along its length.

In regards to claim 6, Kessler et al discloses a sealing element (26) positioned between confronting surfaces of the first and second pieces of pipe to help provide a watertight seal therebetween.

In regards to claim 7, Kessler et al discloses an adhesive material (40, 42) acting between confronting surfaces of the first and second pieces of pipe to bond the first and second pieces to each other upon insertion of the second piece into the female end of the first piece.

In regards to claim 19, Kessler et al discloses a coupling system for coupling like-shaped and like sized pipe segments to each other, including a female end of a first pipe and a male end of a second segment, at least one of the female and the male ends being temporarily deformed within its elastic limits to permit insertion of the male end into the female end, the temporarily deformed end returning toward its original configuration following insertion of the male end into the female end, the female and male ends configured so that hoop stresses are generated by the material memory of the deformed end to maintain desired engagement between the pipe segments.

In regards to claim 20, Kessler et al discloses a pipe joint comprising first and second pieces of pipe having a generally uniform cross-sectional pattern; a female end of the first piece of pipe formed by temporary expansion of the end via application of energy thereto, the expansion not exceeding the limits of the pipe material's ability to return substantially to its original cross-sectional shape and size; and a non-expanded

end of the second piece of pipe insertable within the female end of the first piece of pipe while the female end is expanded.

Claims 1-3, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 5813701, Noble.

In regards to claim 1, Noble discloses an apparatus for joining a plurality of pieces of pipe, including a first piece of pipe (10b) fabricated with a cross-sectional sidewall pattern along its length that is similar in size and shape to the cross-sectional sidewall pattern of a second piece of pipe (10a), the first piece having a first female end that is temporarily deformed for receiving a non-deformed end of the second piece of pipe, the temporary deformation being both sufficiently large to permit the insertion of the non-deformed end of the second piece of pipe but also sufficiently small to ensure that the material memory of the first end returns the first end toward its original non-deformed configuration with sufficient compressive force to grip the second end and prevent its inadvertent removal from engagement with the first end.

In regards to claim 2, Noble discloses engagement elements (46b, 48a) formed within the cross-sectional sidewall pattern, the engagement elements acting between the first and the second pieces of pipe to increase the force necessary to disengage the pipe pieces from each other following assembly.

In regards to claim 3, Noble discloses the pipe sidewall pattern including a corrugated exterior surface and including an internal non-corrugated liner element.

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In regards to claim 19, Noble discloses a coupling system for coupling like-shaped and like sized pipe segments to each other, including a female end of a first pipe and a male end of a second segment, at least one of the female and the male ends being temporarily deformed within its elastic limits to permit insertion of the male end into the female end, the temporarily deformed end returning toward its original configuration following insertion of the male end into the female end, the female and male ends configured so that hoop stresses are generated by the material memory of the deformed end to maintain desired engagement between the pipe segments.

In regards to claim 20, Noble discloses a pipe joint comprising first and second pieces of pipe having a generally uniform cross-sectional pattern; a female end of the first piece of pipe formed by temporary expansion of the end via application of energy thereto, the expansion not exceeding the limits of the pipe material's ability to return substantially to its original cross-sectional shape and size; and a non-expanded end of the second piece of pipe insertable within the female end of the first piece of pipe while the female end is expanded.

Claims 1-3, 5-7, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 3330303, Fochler.

In regards to claim 1, Fochler discloses an apparatus for joining a plurality of pieces of pipe, including a first piece of pipe (10) fabricated with a cross-sectional sidewall pattern along its length that is similar in size and shape to the cross-sectional sidewall pattern of a second piece of pipe (10), the first piece having a first female end

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that is temporarily deformed for receiving a non-deformed end of the second piece of pipe, the temporary deformation being both sufficiently large to permit the insertion of the non-deformed end of the second piece of pipe but also sufficiently small to ensure that the material memory of the first end returns the first end toward its original non-deformed configuration with sufficient compressive force to grip the second end and prevent its inadvertent removal from engagement with the first end.

In regards to claim 2, Fochler discloses engagement elements (26, 28) formed within the cross-sectional sidewall pattern, the engagement elements acting between the first and the second pieces of pipe to increase the force necessary to disengage the pipe pieces from each other following assembly.

In regards to claim 3, Fochler discloses the pipe sidewall pattern including a corrugated exterior surface and including an internal non-corrugated liner element.

In regards to claim 5, Fochler discloses the first piece of pipe including a second end remote from the first end, the second end also being temporarily deformed to function as a female end for receiving a corresponding non-deformed end of a third piece of pipe, the third piece (not shown but implied) of pipe having a cross-sectional sidewall pattern along its length that is similar in size and shape to the cross-sectional sidewall pattern of the first and second pieces of pipe.

In regards to claim 6, Fochler discloses a sealing element (30) positioned between confronting surfaces of the first and second pieces of pipe to help provide a watertight seal therebetween.

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In regards to claim 7, Fochler discloses an adhesive material (30) acting between confronting surfaces of the first and second pieces of pipe to bond the first and second pieces to each other upon insertion of the second piece into the female end of the first piece.

In regards to claim 19, Fochler discloses a coupling system for coupling like-shaped and like sized pipe segments to each other, including a female end of a first pipe and a male end of a second segment, at least one of the female and the male ends being temporarily deformed within its elastic limits to permit insertion of the male end into the female end, the temporarily deformed end returning toward its original configuration following insertion of the male end into the female end, the female and male ends configured so that hoop stresses are generated by the material memory of the deformed end to maintain desired engagement between the pipe segments.

In regards to claim 20, Fochler discloses a pipe joint comprising first and second pieces of pipe having a generally uniform cross-sectional pattern; a female end of the first piece of pipe formed by temporary expansion of the end via application of energy thereto, the expansion not exceeding the limits of the pipe material's ability to return substantially to its original cross-sectional shape and size; and a non-expanded end of the second piece of pipe insertable within the female end of the first piece of pipe while the female end is expanded.

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Claims 1-3, 5-7, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 4037626, Roberts, Jr..

In regards to claim 1, Roberts, Jr. discloses an apparatus for joining a plurality of pieces of pipe, including a first piece of pipe (10) fabricated with a cross-sectional sidewall pattern along its length that is similar in size and shape to the cross-sectional sidewall pattern of a second piece of pipe (10), the first piece having a first female end that is temporarily deformed for receiving a non-deformed end of the second piece of pipe, the temporary deformation being both sufficiently large to permit the insertion of the non-deformed end of the second piece of pipe but also sufficiently small to ensure that the material memory of the first end returns the first end toward its original non-deformed configuration with sufficient compressive force to grip the second end and prevent its inadvertent removal from engagement with the first end.

In regards to claim 2, Roberts, Jr. discloses engagement elements (13, 14) formed within the cross-sectional sidewall pattern, the engagement elements acting between the first and the second pieces of pipe to increase the force necessary to disengage the pipe pieces from each other following assembly.

In regards to claim 3, Roberts, Jr. discloses the pipe sidewall pattern including a corrugated exterior surface and including an internal non-corrugated liner element.

In regards to claim 5, Roberts, Jr. discloses the first piece of pipe including a second end remote from the first end, the second end also being temporarily deformed to function as a female end for receiving a corresponding non-deformed end of a third piece of pipe, the third piece (not shown but implied) of pipe having a cross-sectional

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sidewall pattern along its length that is similar in size and shape to the cross-sectional sidewall pattern of the first and second pieces of pipe.

In regards to claim 6, Roberts, Jr. discloses a sealing element (16) positioned between confronting surfaces of the first and second pieces of pipe to help provide a watertight seal therebetween.

In regards to claim 7, Roberts, Jr. discloses an adhesive material (16) acting between confronting surfaces of the first and second pieces of pipe to bond the first and second pieces to each other upon insertion of the second piece into the female end of the first piece.

In regards to claim 19, Roberts, Jr. discloses a coupling system for coupling like-shaped and like sized pipe segments to each other, including a female end of a first pipe and a male end of a second segment, at least one of the female and the male ends being temporarily deformed within its elastic limits to permit insertion of the male end into the female end, the temporarily deformed end returning toward its original configuration following insertion of the male end into the female end, the female and male ends configured so that hoop stresses are generated by the material memory of the deformed end to maintain desired engagement between the pipe segments.

In regards to claim 20, Roberts, Jr. discloses a pipe joint comprising first and second pieces of pipe having a generally uniform cross-sectional pattern; a female end of the first piece of pipe formed by temporary expansion of the end via application of energy thereto, the expansion not exceeding the limits of the pipe material's ability to return substantially to its original cross-sectional shape and size; and a non-expanded

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end of the second piece of pipe insertable within the female end of the first piece of pipe while the female end is expanded.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patents 5842727 and 4141576 illustrate representative coupling for interconnecting adjacent ends of corrugated pipes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron M Dunwoody whose telephone number is (703) 306-3436. The examiner can normally be reached on Monday - Friday between 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on (703) 308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.


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